



AR 2

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**BRINKS
HOFER
GILSON
& LIONE**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. of: Imundo et al.

Appln. No.: 09/853,945

Filed: May 11, 2001

For: Process for Repairing A Structure

Attorney Docket No: 10420-15

Examiner: Jermie E. Cozart

Art Unit: 3726

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL

Sir:

Attached is/are:

- ☒ Transmittal (in duplicate); Reply Brief (9 pages)
- ☒ Return Receipt Postcard

Fee calculation:

- ☐ No additional fee is required.
- ☐ Small Entity.
- ☐ An extension fee in an amount of \$_____ for a _____-month extension of time under 37 C.F.R. § 1.136(a).
- ☐ A petition or processing fee in an amount of \$_____ under 37 C.F.R. § 1.17(_____).
- ☐ An additional filing fee has been calculated as shown below:

					Small Entity			Not a Small Entity	
	Claims Remaining After Amendment		Highest No. Previously Paid For	Present Extra	Rate	Add'l Fee	or	Rate	Add'l Fee
Total		Minus			x \$25=			x \$50=	
Indep.		Minus			x 100=			x \$200=	
First Presentation of Multiple Dep. Claim					+\$180=			+\$360=	
					Total	\$		Total	\$

Fee payment:

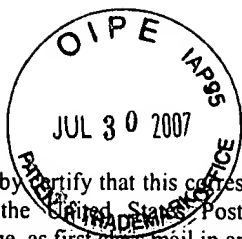
- ☐ A check in the amount of \$_____ is enclosed.
- ☐ Please charge Deposit Account No. 23-1925 in the amount of \$_____ . A copy of this Transmittal is enclosed for this purpose.
- ☐ Payment by credit card in the amount of \$_____ (Form PTO-2038 is attached).
- ☒ The Director is hereby authorized to charge payment of any additional filing fees required under 37 CFR § 1.16 and any patent application processing fees under 37 CFR § 1.17 associated with this paper (including any extension fee required to ensure that this paper is timely filed), or to credit any overpayment, to Deposit Account No. 23-1925.

7-27-07
Date

Respectfully submitted,
Anastasia Heffner
Anastasia Heffner (Reg. No. 47,638)

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Date of Signature

Case No. 10420/15

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Imundo et al.

Serial No.: 09/853,945

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For: Process for Repairing A
Structure

Examiner: Jermie Cozart

Group Art Unit: 3726

REPLY BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This brief is in response to the Examiner's Answer, filed May 30, 2007.

REPLY TO EXAMINER'S ANSWER

Appellants have chosen to address selected particular points of the Examiner's Answer, as many of the Examiner's arguments repeat the final rejections and thus are addressed in Appellants' Appeal Brief. Therefore, the lack of a specific response to a point raised in the Examiner's Answer is not a concession of the rejection. Rather, Appellants' position may be found in the Appeal Brief filed on March 21, 2007.

A. The Examiner has failed to provide an appropriate reasoning to combine the teachings of Richter or Heier.

The Examiner has rejected independent claims 1, 2, 4, 5, 7, 9, 10, 12, 13, 15, 16, 18, 20 and 21 under 35 U.S.C. § 103(a) in view of Richter and in further view of Heier. Claims 1 and 12 are independent claims from which the others depend.¹ The Examiner maintains that there is sufficient motivation to combine based on each of the references disclosing a digital measuring device, without taking into account that all digital measuring devices are not necessarily the same, and thus do not necessarily operate in the same way and solve the same problems. Conceding that Richter does not disclose a multi-axis measuring device (*see* Examiner's Answer dated May 30, 2007, p. 4), the Examiner relies upon the coordinate measuring machine (CMM) of Heier so that the combination of Richter and Heier "effectively record[s] horizontal optical intersects of a given work-piece at different heights." Office Action dated June 15, 2005, p. 4, lines 10-17.

The Examiner, however, provides no other justification for combining these references other than that they both are directed to digital measuring devices. In fact, a reading of Heier shows that one of ordinary skill in the art would not be motivated to combine the teachings of Heier with Richter. Heier is from a completely different art than Richter, and addresses a different problem. Specifically, Heier requires objects that are subject to measurement to be mounted to a vibration damped table. *See* Heier, col. 2, lns. 41-43. As shown below, Heier discloses a CMM that is made up of four cameras, or machines, 7a-7d, that "are arranged together on a vibration damped table." *See* Heier, col. 2, lns. 51-52; Fig. 1.

¹ In response to the Examiner's Answer, Applicants' have provided additional reasons for the patentability of claims 2, 3, 8, 9, 11, 13, 14, 19, 21, and 22.

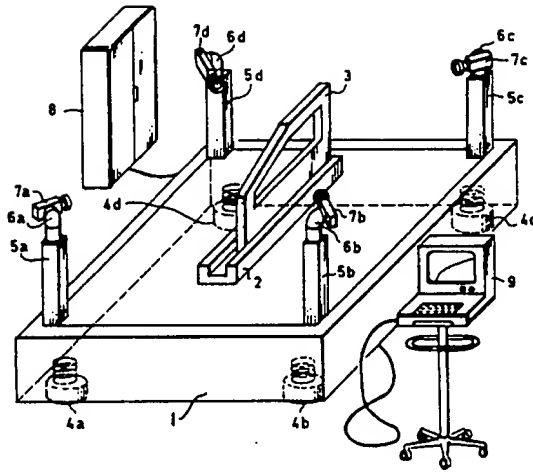


FIG. 1

The vibration damped table prevents environmental influences from substantially affecting the sensitive optical measurements performed by the CMM. *See Heier*, col. 2, lines 44-47. Thus, Heier requires the vibration damped table in order for the CMM device to operate properly for its intended purpose. In contrast, Richter discloses a method of repairing compressor and turbine blades of jet engines by recording a single image with a digital camera. *See Richter*, col. 1, lns. 6-8; col. 4 lns. 45-59. Common sense dictates that mounting structures of such a substantial size to a vibration damped table as taught by Heier would be impossible. *See Leapfrog Enters. Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161, 82 USPQ2d 1687, 1691 (Fed. Cir. 2007) (citing *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007)) (“[C]ommon sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not.”) Thus, Heier is from a different art that requires mounting to a vibration damped table, and it would be an improper reference to combine with Richter.

B. The Examiner has failed to show that the improper combination of Richter and Heier discloses all the limitations of claims 1 and 12

The Examiner continues to wrongfully insist that the CMM device of Heier, which is comprised of four cameras, is the equivalent of the *single* multi-axis digital measuring device as claimed in claims 1 and 12. The specification of Appellants’ application provides ample support that the claimed multi-axis digital measuring device is a single machine. *See Appellants’ Application*, p. 5, lns. 10-12; Fig. 4. *See Phillips v. AWH Corp.*, 415 F.3d 1315,

75 U.S.P.Q.2d 1321, 1327 (Fed. Cir. 2005) (the specification is the best guide to interpreting the claims). While the Examiner concedes that Heier “discloses the use of more than [one] multi-axis digital measuring device”, the Examiner states that the CMM device is equivalent to a single multi-axis digital measuring device because “each multi-axis digital measuring device performs a measurement.” Examiner’s Answer dated May 30, 2007, p. 8. This conclusion is incorrect because it completely ignores the teachings of Heier. The CMM of Heier requires four cameras and four articulating heads (one for each camera), each with its own housing, in four widely-spaced locations, with each head having a provision for selective rotation about each of two orthogonally related axes. *See* Heier, Abstract, lns. 3-7. Furthermore, as Appellants have stated in their brief, Heier requires at least two cameras, with two housings and two locations, to generate intercepts in order to work for its intended purpose. *See* Appellants’ Brief, p. 8. Simply put, the device of Heier, a CMM containing four cameras, is not the claimed multi-axis digital measuring device.

The other claims of the Applicants’ application provide additional support that the claimed multi-axis digital measuring device is a single machine. *See Jansen v. Rexall Sundown Inc.*, 342 F.3d 1329, 1333, 68 U.S.P.Q.2d 1154, 1158 (Fed. Cir. 2003) (claims can and should be interpreted in view of other claims). As Appellants point out in their brief, which the Examiner does not address, claims 5 and 17 refer to “the device,” thus referring to a single device (as opposed to devices). Moreover, claims 6 and 17 do not make sense if the recited mounting bracket refers to more than a single “multi-axis device.” Thus, there is ample support in the claims that the claimed multi-axis digital measuring device is a single device.

Furthermore, the combination of Richter and Heier fails to disclose the claimed “multi-axis digital measuring device” because Richter fails to teach or suggest taking measurements at multiple heights. Specifically, Richter teaches that a digital camera captures a single image of a blade at a particular height *h*. Based on this *single* image, Richter achieves his repair part “in the form of a sheet or a plate having a proper thickness *d* so that the total height of the blade after being repaired will correspond” to the desired height. *See* Richter, col. 4, lns. 45-59. Thus, Richter demonstrates that repair may be achieved by recording a single image at one particular height. One of ordinary skill would

have no need to look past the teachings of Richter in order to record optical intersects at different heights (as disclosed by Heier), as Richter claims to solve the problems utilizing a “standardized height” without needing to take measurements at a variety of heights. *See, e.g.,* Richter, Abstract; col. 3, lns. 65-68 to col. 4, ln. 1. Indeed, while the Examiner claims “a more comprehensive image” may be obtained by combining Richter and Heier (Examiner’s Answer, p. 8), this is nothing more than impermissible hindsight and conjecture. The Examiner fails to explain why one of ordinary skill in the art would make this combination when Richter only teaches or suggests the taking of a single image at a single height to make a complete repair. Therefore, the combination of Richter and Heier fails to disclose all of the claimed limitations.

Accordingly, Appellants respectfully submit that independent claims 1 and 12 are distinguishable from Richter and Heier and contain allowable subject matter. Dependent claims 2-11 and 13-22 depend from claims 1 and 12, respectively, and are allowable for this same reason and for the additional reasons provided below and in Appellants’ Appeal Brief.

C. The Examiner has failed to show that the improper combination of Richter and Heier discloses all the limitations of claims 2 and 13.

While Applicants’ believe that claims 2 and 13 are allowable at least for the same reasons that the claims from which they depend are allowable, Applicants’ would like to address the Examiner’s incorrect statements regarding these claims directly. The Examiner wrongfully states that the “angular measurement values” disclosed in Heier constitute the claimed “additional data.” *See* Examiner’s Answer dated May 30, 2007, pp. 8-9. Appellants have stated in their brief that the specification supports a definition of “additional data” as adding original manufacturing or inspection data for use in automatically manufacturing the repair part. *See* Appellant’s Brief, p. 10. Heier teaches that both positional measurement values and angular-measurement values are stored in the computer 10 of the CMM. Heier, col. 5, lns. 49-63. With respect to the angular-measurement values, Heier discloses that at the same time as the positional measurement values are being stored, the images that correspond to the different angular positions of the camera (i.e., the angular-measurement values) are also being transmitted to the computer of the CMM. *See* Heier, col. 5, lns. 56-63. The angular-measurements clearly are a direct result of the measurement cycle disclosed by

Heier. Thus, the Examiner is wrong in claiming that the angular-measurement values constitute “additional data” because the values are not generated in measuring the structure. See Examiner’s Answer dated May 30, 2007, p. 9. As such, Heier fails to disclose the claimed “additional data”, and thus, the combination of Richter and Heier fails to disclose all the limitations of claims 2 and 13. Accordingly, Appellants respectfully submit that for this additional reason claims 2 and 13 are distinguishable from Richter and Heier and contain allowable subject matter.

D. The Examiner has failed to show that the improper combination of Richter, Heier, and Applicants’ Appeal Brief (3/25/04) disclose all the limitations of claims 3 and 14

While Applicants’ believe that claims 3 and 14 are allowable at least for the same reasons that the claims from which they depend are allowable, Applicants’ would like to address the Examiner’s incorrect statements regarding these claims directly. The Examiner is incorrect in stating that one of ordinary skill would plan a process to manufacture the repair part of Richter/Heier in order to accomplish the manufacture of the part. As stated above, the combination of Richter and Heier does not render obvious the claimed invention. In addition, as Applicants state in their brief, the Examiner improperly cited Applicants’ prior appeal brief as prior art in this application, even though the present application was filed approximately three years before the preparation of the brief. See Appellants’ Brief, pg. 13. Furthermore, the Examiner has incorrectly characterized the level of ordinary skill in the art for this invention. As previously stated, the present application is directed towards solving the problems associated with preparing replacement parts for large structures, such as aircrafts. Aircrafts are repaired by technicians that receive specialized training and certification, which differs from the level of training required for the repair of the devices disclosed by Heier. Thus, the combination of Richter and Heier fails to disclose all the limitations of claims 3 and 14. Accordingly, Appellants respectfully submit that for these reasons, claims 3 and 14 are distinguishable from Richter and Heier and contain allowable subject matter.

E. The Examiner has failed to show that the improper combination of Richter, Heier, and Flint discloses all the limitations of claims 8, 11, 19, and 22.

While Applicants' believe that claims 8, 11, 19, and 22 are allowable at least for the same reasons that the claims from which they depend are allowable, Applicants' would like to address the Examiner's incorrect statements regarding these claims directly. The Examiner is incorrect in stating that one of ordinary skill in the art would look to substitute the CMM device of Heier with the laser of Flint. First, as the Appellants state in their brief, Richter and Heier, via digital cameras, already produce digitized signals, and thus one of ordinary skill would not be motivated to look to lasers to achieve a digitized signal. *See* Appellants' Brief, p. 14. Next, Richter and Heier are specifically directed to digital cameras, and the Examiner never explains why one of ordinary skill in the art would look to the laser arts to combine lasers with the disclosures of Richter/Heier. As described above, the CMM device of Heier requires four cameras, with four separate articulating heads and housings, as well as specific software. Furthermore, Heier also requires that the cameras and the structure to be measured to be mounted to a vibration damped table. Flint, on the other hand and shown in Figure 1 below, is directed to a single scanner that requires custom software. *Compare* Flint, Fig. 1 reproduced below, *with* Heier, Fig. 1 reproduced above; *see* Flint, Abstract.

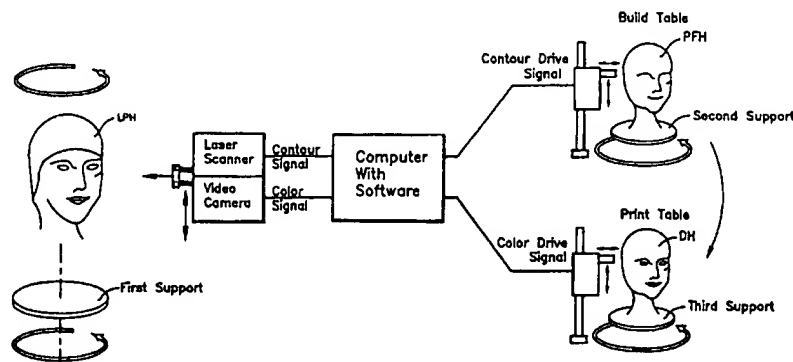


FIG. 1

The teachings of Flint do not remedy the deficiencies of Richter, alone or in combination with Heier, and thus, there is no motivation to combine Flint with Richter/Heier.

Accordingly, Appellants request the Board to reverse the rejection under 35 U.S.C. § 103(a) of claims 8, 11, 19, and 22 over Richter in view of Heier and further in view of Flint.

F. The Examiner has failed to show that the improper combination of Richter and Heier discloses all the limitations of claims 9 and 21.

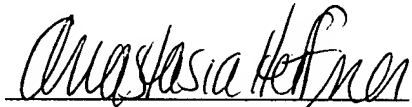
While Applicants' believe that claims 9 and 21 are allowable at least for the same reasons that the claims from which they depend are allowable, Applicants' would like to address the Examiner's incorrect statements regarding these claims directly. The Examiner wrongfully states that the calculations required by Heier constitute the claimed feature of "translating data from a first format to a second format." *See* Examiner's Answer dated May 30, 2007, p. 9. The specification of Applicants' application provides clear support that that data received in a first programmable language by the claimed invention is translated to a second programmable language. *See* Applicants' Application, p. 10, line 32, to p. 11, line 2. In other words, the measured information of the structure does not remain in the same format in which it is received. In contrast, Heier only requires that the computer receives the measurement data and calculates the coordinates of each measured point. *See* Heier, col. 6, lns. 4-11. Heier fails to provide any disclosure or otherwise teach that the original data format is changed or otherwise manipulated into a second format in order to properly complete the measurement process. As Applicants' stated in their brief, a person of ordinary skill in CNC arts would recognize that "translating data" from a first format to a second format is different from what is taught by Heier. *See* Applicants' Brief, p. 12. Accordingly, the combination of Richter and Heier fails to disclose all the limitations of claims 9 and 21, and thus the claims contain allowable subject matter.

CONCLUSION

Contrary to the Examiner's arguments set forth in the Examiner's Answer, it is respectfully submitted that the cited references do not teach the structure that is present in Appellants' claims, thus failing to teach each and every element of those claims. Appellants further submit that the present invention is fully patentable over the cited references and thus, the Examiner's rejection should be REVERSED.

Respectfully submitted,

Dated: July 27, 2007



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